National Aeronautics and Space Administration

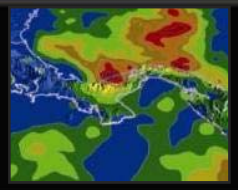
Marshall Space Flight Center

Science and Technology Office Overview

marshall








Speaker Name

Date

www.nasa.gov

Science and Technology Office

Science & Technology Office

Center Management

- Science & Technology Office
- Flight Programs & Partnerships Office
- Space Launch Systems Office
- Shuttle – Ares Transitions Office

Dan Schumacher
Manager

Corky Clinton
Deputy Manager

Science and Research Office


Earth Science


Astrophysics


Heliophysics & Planetary Science

Science and Space Technology Projects Office


Science Instrument Mgmt


X-Ray & Cryogenic Facility (XRCF) Test


Chandra & JWST Management

Technology Development & Transfer Office


Game Changing Development


Centennial Challenges


Small Spacecraft Technology Development


Technology Transfer

Science and Technology Objectives

Science & Technology Office

Conduct **research** to understand Earth and the universe by advancing knowledge and exploration concepts and capability.

.

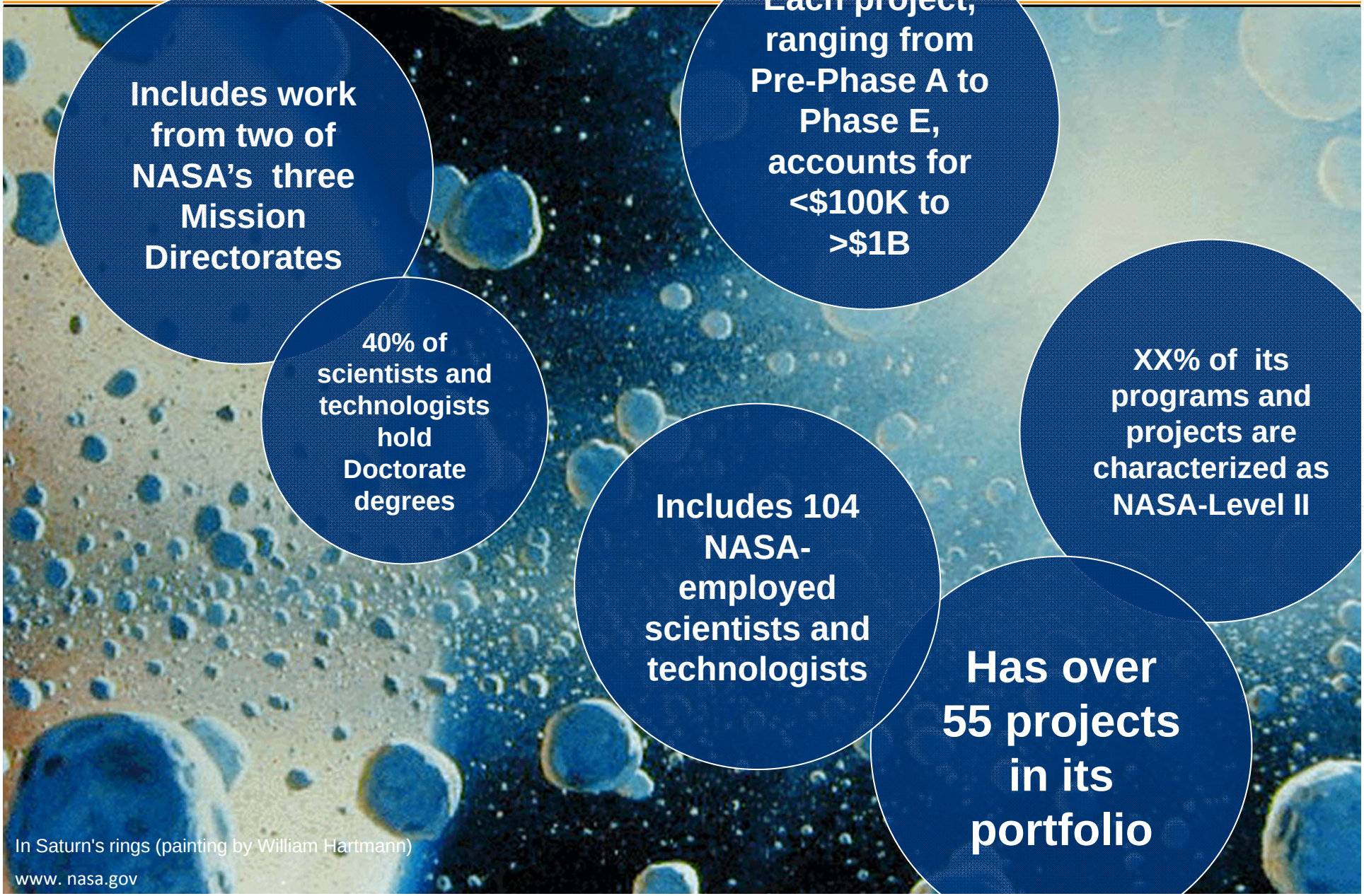
Develop technology that integrates or leverages both science and engineering concepts.

Effectively **manage** programs and projects assigned to and won by Marshall Space Flight Center.

…Fulfilling NASA's Mission with each objective

Science & Technology Facts

Science & Technology Office

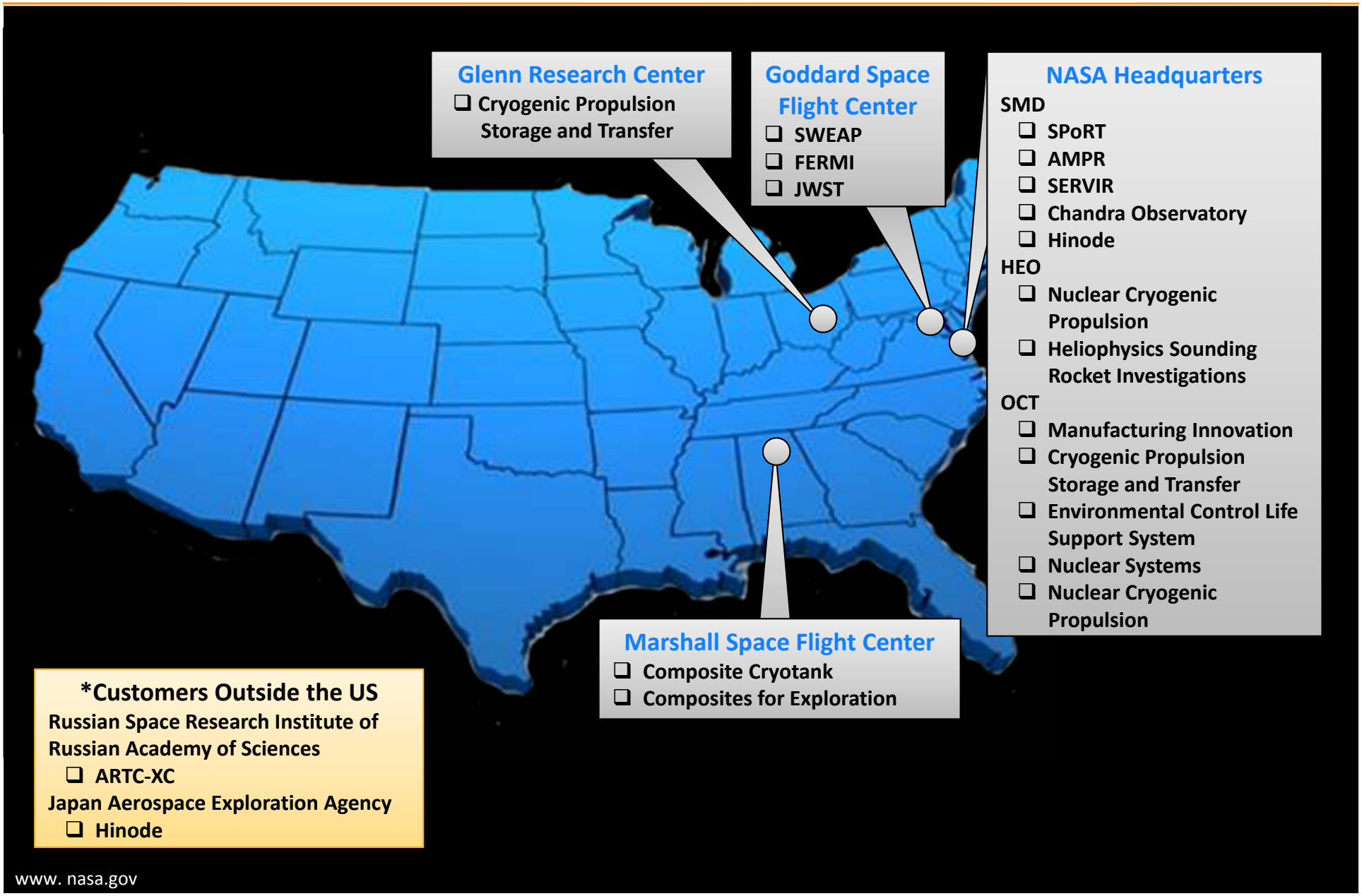


In Saturn's rings (painting by William Hartmann)

www. nasa.gov

Science and Technology Office Customers

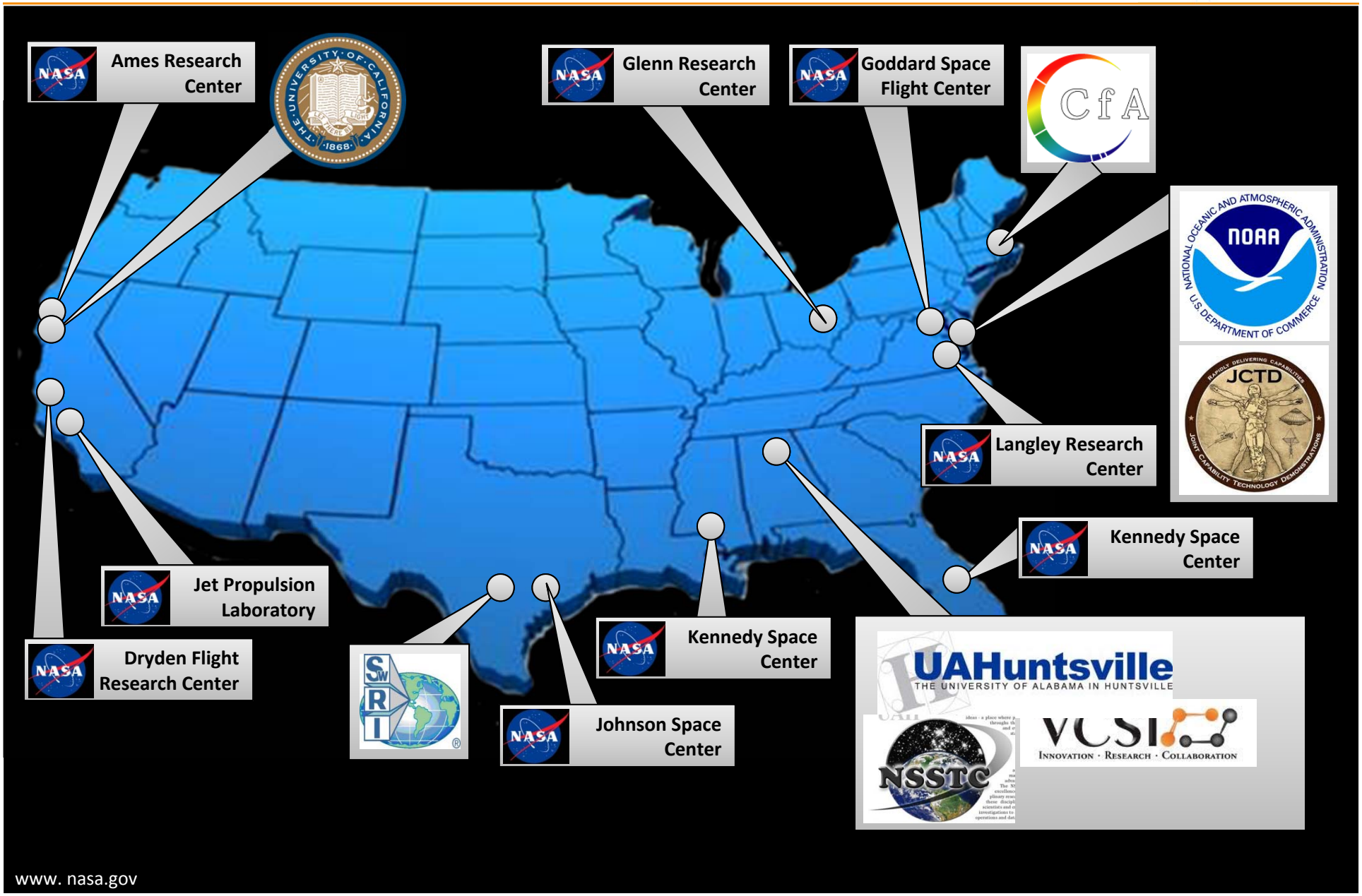
Science & Technology Office



www. nasa.gov

Science and Technology Office Partnerships

Science & Technology Office



Science and Research Office

Science & Technology Office

Mission: Provide continued support of the Nation and of NASA's strategic goal to expand scientific understanding of the Earth and its universe

Key Objectives:

- Sustain, nurture and build new areas of excellence in Space and Earth science, and relevant technologies that support and advance NASA objectives
- Maintain a competitive portfolio of advanced capabilities, and a relevant strategy, in order to secure new investigations and missions
- Serve as a consistent, collaborative, and professional science interface between MSFC and key stakeholders
- Develop strategic partnerships and work together to pursue new opportunities

James Spann, Ph.D., Manager
Michael Lapointe, Ph.D., Deputy Manager

Earth Science

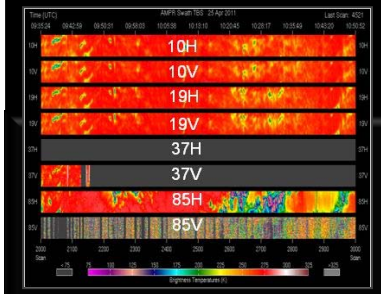
- Earth Science Research and Analysis
- Applied Earth Science

Astrophysics

- X-Ray
- Gamma Ray
- Cosmic Ray

Heliophysics & Planetary Science

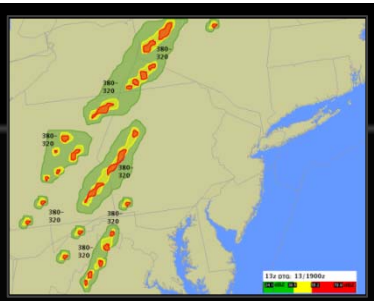
- Planetary Science
- Solar Physics
- Space Weather



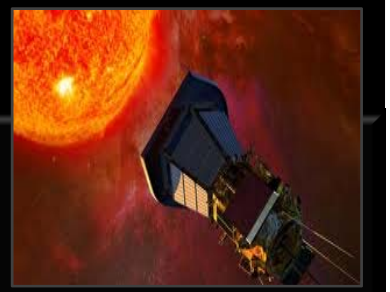
AMPR

Hurricane Imaging Radiometer

SERVIR



SPoRT



SWEAP

Science and Space Technology Projects Office

Mission: Oversee the development and operations of assigned programs and projects that advance the cutting-edge frontiers of science

Key Objectives:

- Lead the design, development and implementation of cutting edge science projects, programs, and supporting technology that meet the needs of NASA and its stakeholders
- Demonstrate innovative techniques and processes in providing superior programmatic support and applied science solutions for assigned NASA scientific investigations and missions
- Maintain strategic, long-range plans and requirements for the S&T Projects Office and each of its program and projects

Keith Hefner, Manager
Randy Baggett, Assistant Manager

Science Instrument Mgmt
Management and technical support for space-flight mission instruments

X-Ray & Cryogenic Facility Test
World's largest X-ray telescope test facility; Unique, cryogenic, and clean room optical facility

Chandra & JWST Management
Manage the Chandra X-ray telescope (in orbit 12 years) & James Webb Space Telescope (18 mirror test)

ART-XC

Chandra

Fermi Gamma Ray Burst Monitor

HINODE (Solar B)

James Webb Space Telescope

PEOPLE - ACE

Technology Development & Transfer Office

Science & Technology Office

Mission: Develop and mature a broad range of technologies that address the challenges of human and robotic space exploration

Key Objectives:

- Develop the technologies and processes necessary for sustainable human and robotic space flight programs- on schedule and within budget
- Sustain efforts across a range of technology readiness levels and address specific human and robotic space flight requirements
- Develop and maintain relationships and partnerships within NASA and its stakeholders

Daniel J. Dorney, Ph.D., Manager

Game Changing Development

- Propulsion & Power Technology
- Exploration Technologies

Centennial Challenges

Competitive prize competitions for advanced and innovative solutions

Small Spacecraft Technology

Affordable and sophisticated small satellites and launch payloads

Technology Transfer

- Technology Analysis & Evaluation
- SBIR/STTR Program
- Technology Transfer

Cryogenic Propellant Storage & Transfer

FASTSAT

Manufacturing Innovation

Next Generation Life Support

Nuclear Cryogenic Propulsion Stage

S&T's Role at Marshall Space Flight Center

Science & Technology Office

2012 Marshall Goals	S&T Efforts	
1. Develop and operate integrated vehicles and systems to enable human space activities.	• Cryogenic Propellant Storage & Transfer • Environmental Control and Life Support System • Next Generation Life Support • Nuclear Cryogenic Propulsion Stage	
2. Develop, integrate, and operate instruments and conduct research to expand knowledge of the universe.	• Chandra • FASTSAT • FERMI	• HINODE • JWST
3. Develop, test, and mature new space technologies to enable NASA missions and benefit the Nation.	• Centennial Challenges • Technology Transfer • HIRAD	• PEOPLE-ACE • SERVIR • SPoRT
4. Provide and manage program, project, and institutional capabilities to conduct NASA's and MSFC's space activities.	• Centennial Challenges • Chandra • JWST	• **Technology Transfer**
5. Share NASA and MSFC with the public, educators, and students to foster communication, participation, and innovation to benefit the interests of the Nation.	• Centennial Challenges • Technology Transfer • PEOPLE-ACE • SERVIR	


Questions?